pathologic process that results from interruption of blood supply to the bone. The condition is extremely rare in healthy individuals, although it occurs usually before the fifth decade. The most common localization of idiopathic avascular necrosis is the femoral head, although it affects the knee as well. Pain often occurs only at an advanced stage of the condition.
Osteoarthritis (OA) conceived as a degenerative consequence of aging of the joint, with a well-characterized molecular pathophysiology, whereas rheumatoid arthritis (RA) is a common, inflammatory polyarthritis. The onset of RA varies from acute to insidious. The most common site of onset is in the hands and feet. Knee joints are also commonly affected, although it is not the initial joint.
Peripherially, or centrally released β-endorphin is an important indicator of pain and inflammation. As only a limited number of papers have been published before on the subject of the analysis of synovial fluid from hip and knee joint in different arthropathies, we wish to reply the question whether there is a difference in between the β-endorphin levels of patients with avascular necrosis, osetoarthritis and rheumatoid arthritis of the hip and knee. The role of β-endorphin in alleviation of pain has been well-described, while there are less data of its function in synovial fluid.
Methods: 87 patients (62 female, 25 male) were involved in our study with an average age of 62 (±11.27) years. 33 patients had avascular necrosis of stage IV, V, VI according to Steinberg's classification (18 hips, 15 knees). 23 patients suffered from OA (14 hips, 9 knees), whereas stage III-IV RA was diagnosed in 31 patients (12 hips, 19 knees) due to Steinbrocker's classification. Patients with OA and RA meet the ARA requirements. We measured the β-endorphin levels of the synovial fluids -harvested from surgery- with radioimmun assay (RIA).
Results: Our experiments showed elevated level of β-endorphin in synovial fluid of patients with AVN comparing to OA and RA, however significance was not proven due to a relatively high standard deviation. Nevertheless β-endorphin level was significantly higher in RA group than among patients with OA (p=0.012). Synovial β-endorphin level was measured lower in knee comparing to hip joint. When examining the different joints separately in compliance with diagnoses, we concluded that the synovial β-endorphin level from AVN was between the values of OA and RA without significance, whereas in RA it was significantly higher than from OA irrespectively of the joint (p=0.03 knee, p=0.013 hip).
Conclusions: synovial β-endorphin level in patients with inflammatory autoimmune diseases (e.g. RA), comparing to the level measured in degenerative conditions (e.g. OA). We interpret the higher β-endorphin level in AVN than in OA with the clinically well-known fact, that AVN is always accompanied by a synovial inflammation. The markedly higher β-endorphin level in patients with RA of the knee contrary to OA confirms the fact that the immune system has a strong impact on the expression of β-endorphin of opioid receprors and ligands of peripherial sensorial neurons.

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STERNAL FRACTURE AFTER MINOR TRAUMA IN A PATIENT WITH KYPHOSIS: A CASE REPORT

T. Nakajima, Y. Shimizu, K. Tanabe
Nishinomiya Municipal Central Hosp., Nishinomiya, Japan

Purpose: Older patients tend to suffer from osterarthritis of many joints and osteoporosis. In such cases, several types of fractures can easily occur. We present a case of sternal fracture after a subtle trauma in a patient with Kyphosis. 7 days after a very slight contact injury to her anterior chest, she suddenly experienced severe pain. To our knowledge, there are no reports of such a case.
Methods: We present a case of 69-year-old woman with kyposis. One day, her anterior chest was bumped slightly. She experienced mild discomfort in the anterior chest. She could, however, spend daily life without a difficulty. 7 days after, her discomfort then spontaneously transformed into severe pain and she visited a hospital, but the X-ray examination revealed no rib fractures. Nevertheless, severe pain persisted, so she visited our hospital 14 days after. On our first examination, her anterior chest pain was very severe. She could not move without help and a great deal of time was required to change her body position. In our first plain X-ray examination, we could confirm the step off fracture at the body of the sternum and many old vertebral compression fractures in her thoracic and lumbar spines. Fracture of the sternum was also confirmed by computed tomography, and there was no evidence of tumoral infiltration and no obvious abnormality in her mediastinum. Her bone density was examined using ultrasound, it was only 43% of the mean value for young adults. After confirming chest X-rays, electrocardiograms, Holter monitoring, echocardiograms, pulmonary function tests, laboratory tests failed to disclose the pathology, we made the diagnosis of sternal fracture secondary to severe osteoporosis and kyphosis.
Results: By conservative treatment with a rib band, 70 days after the onset, we could see the callus formation around the fracture and her discomfort became better. But, 3 months after, her discomfort became worse again and we confirm re-fracture at the same point. 6 months after, her pain disappeared and we could confirm callus on the X-ray. It took about a year to confirm sound bone union.
Conclusions: The sternum and ribs are usually protected from injury by the elasticity of the costal cartilage. However, these bones may become progressively ossified with age such that the deforming stress due to the thoracic kyphosis may be transmitted directly to the sternum (Sapherson, 1990). Thoracic kyphosis is thought to enhance the potential for a sternal insufficiency fracture by creating a deforming stress that exceeds the diminished elastic resistance of the osteoporotic bone (Cooper, 1988).
Based on the clinical course of our case, sternal insufficiency fracture should have been ruled out first. In our case, re-fracture was also seen at the same point during the treatment course. So, in the case of the sternal fracture patients with Kyphosis and osteoporosis, it might be better to take care of the possibility of re-fracture.
Conclusions: 1) In patients with osteoporosis and spinal compression fractures, sternal fracture must be considered if there are any complaints of discomfort in the anterior chest. 2) A lateral view radiograph of the sternum is important for the diagnosis of sternal fracture. 3) It might be better to take care of the possibility of re-fracture in the treatment of the sternal fracture patient with kyphosis and osteopolosis.

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VALIDATION OF CLINICAL PAIN ASSESSMENT METHODS WITH CANINE OSTEOARTHRITIS

P. Rialland[1], S. Bichot[1], M. Moreau[1,2], B. Lussier[2], J.-P. Pelletier[3], J. Martel-Pelletier[3], G. Beauchamp[1], D. Gauvin[1], E. Troncy[1]
[1]GREPAQ - Fac. vet. med. - Université de Montréal, St-Hyacinthe, QC, Canada; [2]GRAC - Fac. vet. med. - Université de Montréal, St-Hyacinthe, QC, Canada; [3]Osteoarthritis Res. Unit - Notre-Dame Hosp., CR-CHUM - Université de Montréal, Montréal, QC, Canada

Purpose: The aim of this clinical study was to evaluate the construct and concurrent validation of chronic pain assessment methods in dogs diagnosed with osteoarthritis (OA). Different